

# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY EXAMINATION REPORT (PCT Article 36 and Rule 70)

10/540172  
Rec'd PCT/PTO 17 JUN 2005

REC'D 20 JAN 2005

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| Applicant's or agent's file reference  | <b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416) |  |
| International application No.<br>PCT/EP 03/12886   | International filing date (day/month/year)<br>11.11.2003   | Priority date (day/month/year)<br>18.12.2002 |
| International Patent Classification (IPC) or both national classification and IPC<br>B01J13/10 |  |  |
| Applicant<br>UNILEVER N.V. et al.  |  |  |

- This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 5 sheets, including this cover sheet.
  - ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

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|---|--|
| Date of submission of the demand<br><br>19.03.2004  | Date of completion of this report<br><br>19.01.2005                          |
| Name and mailing address of the International preliminary examining authority:<br><br> European Patent Office<br>D-80298 Munich<br>Tel. +49 89 2399 - 0 Tx: 523656 epmu d<br>Fax: +49 89 2399 - 4465 | Authorized Officer<br><br>Krajewski, D<br><br>Telephone No. +49 89 2399-8472 |



**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. **PCT/EP 03/12886**

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, Pages**

1-15 as originally filed

**Claims, Numbers**

1-18 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b));
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

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**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement**

**1. Statement**

|                               |             |      |
|-------------------------------|-------------|------|
| Novelty (N)                   | Yes: Claims | 1-15 |
|                               | No: Claims  |      |
| Inventive step (IS)           | Yes: Claims |      |
|                               | No: Claims  | 1-15 |
| Industrial applicability (IA) | Yes: Claims | 1-15 |
|                               | No: Claims  |      |

**2. Citations and explanations**

**see separate sheet**

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/EP 03/12886

Ad V.:

1. Reference is made to the following document/s/:

- D1: RENARD D ET AL: "Biopolymeric colloidal carriers for encapsulation or controlled release applications." INTERNATIONAL JOURNAL OF PHARMACEUTICS (KIDLINGTON), vol. 242, no. 1-2, 2002, pages 163-166, XP002240500 21 August, 2002 ISSN: 0378-5173
- D2: WO 02/41711 A (UNILEVER PLC ;LEVER HINDUSTAN LTD (IN); UNILEVER NV (NL)) 30 May 2002 (2002-05-30)
- D3: OULD ELEYA M M ET AL: "The effects of pH on the rheology of beta - lactoglobulin/ kappa -carrageenan mixed gels." FOOD HYDROCOLLOIDS 14 (3) 245-251 2000 CORRESPONDENCE (REPRINT) ADDRESS, S. L. TURGEON, CENT. DE RECHERCHE EN SCI. ET TECH. DU LAIT, FAC. DES SCI. DE L'AGRIC. ET DE L'ALIMENTATION, UNIV. LAVAL, SAINTE-FOY, QUE. G1K 7P4, CANADA. TEL. +1-4, XP002240501
- D4: SCHMITT C ET AL: "Effect of protein aggregates on the complex coacervation between beta -lactoglobulin and acacia gum at pH 4.2." FOOD HYDROCOLLOIDS 14 (4) 403-413 2000 LAB. DE PHYSICO-CHIMIE ET GENIE ALIMENTAIRES, INPL-ENSAIA, 2 AVE. DE LA FORET DE HAYE, BP 172, F-54505 VANDOEUVRE LES NANCY CEDEX, FRANCE. TEL. +33-3-83-59-58-61. FAX +33-3-83-59-58-04. E-MAIL CHR, XP002240502
- D5: US-A-5 691 060 (LEVY MARIE-CHRISTINE) 25 November 1997 (1997-11-25)
- D6: US-A-5 952 007 (VISSER JOHANNES ET AL) 14 September 1999 (1999-09-14)
- D7: KRUIF C G DE ET AL: "Polysaccharide protein interactions." FOOD HYDROCOLLOIDS 15 (4-6) 555-563 2001 DEBYE RES. INST., UNIV. OF UTRECHT, 3584 CH UTRECHT, NETHERLANDS. TEL. +31-318-659511. FAX +31-318-650400. E-MAIL C.G.DEKRUIF(A)CHEM.UU.NL, XP002240503
- D8: SYRBE A ET AL: "Polymer science concepts in dairy systems - an overview of milk protein and food hydrocolloid interaction." INTERNATIONAL DAIRY JOURNAL 8 (3) 179-193 1998 NESTLE RES. CENT., BP 44, VERS-CHEZ-LES-BLANC, CH 1000 LAUSANNE 26, SWITZERLAND, XP002240504
- D9: EP-A-0 782 883 (JAPAN CAPSULAR PRODUCTS INC ;AJINOMOTO KK (JP)) 9 July 1997 (1997-07-09)
- D10: EP-A-1 371 410 (NIZO FOOD RES) 17 December 2003 (2003-12-17)

**INTERNATIONAL PRELIMINARY  
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International application No. PCT/EP 03/12886

2. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of independent claims 1, 11 and 15 does not involve an inventive step in the sense of Article 33(3) PCT (claims concerned and relevant passages as cited in the search report):  
D1 discloses biopolymeric colloidal carriers for encapsulation or controlled release applications, in particular to entrap both hydrophilic and hydrophobic drugs. Specific simple or complex coacervates are referred to wherein controlled release applications are tested (p. 164, top). D1 discloses the simple coacervate encapsulating Vit. E. D1 discloses complex coacervates of a beta-lactoglobulin/Arabic gum couple prepared in an aqueous phase. It would have been an obvious step for the skilled person to use said couple also for the encapsulation of a hydrophobic substance, ie a vitamin oil in view of D1 only or also in view of a combination of D1 with D2 wherein complex coacervates for the encapsulation of carotenoids are used (combination of D1 with D2; D2; see especially p. 10, l. 11 - p. 11, l. 20)
3. A positive International Preliminary Examination Report for the subject-matter of the dependent claims can only be established when they refer to an independent claim which meets the requirements of the PCT.
4. Although D10 does not constitute prior art in the sense of R. 64(3) PCT, said document appears to anticipate the present application almost in its entirety. D10 is only silent on the use of casein as second polymer.
5. The subject-matter of claims 1-15 meets the requirements of Art. 33(3) PCT.